AT&L Perspective on Joint Capabilities & Defense Cost Research Opportunities

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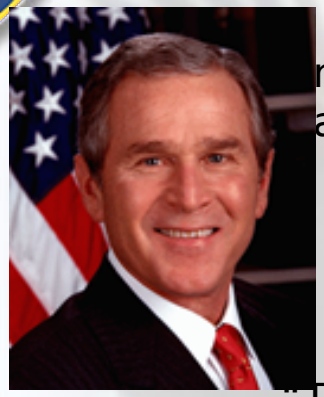
Office of the Under Secretary of Defense

(Acquisition, Technology, & Logistics)

May 26, 2005

Agenda

- Transformation Challenge
- AT&L Focus
- Spectrum of Acquisition
- Transformational Initiatives
- Cost Research Challenges



"The United States will … transform America's national security institutions to meet the challenges and opportunities of the twenty-first century."

»**President George W. Bush**
September 2002

"The Department currently is pursuing transformational business and planning practices such as adaptive planning, a more *entrepreneurial, future-oriented capabilities- based resource allocation process, accelerated acquisition cycles built on spiral development, out-put based management*, and a reformed analytic support agenda."

»**Secretary of Defense Donald Rumsfeld**
Transformation Planning Guidance
April 2003

"DoD has a long way to go to ensure that our acquisition (and sustainment) process achieves the appropriate jointness and interoperability needed in the 21st Century…As we move forward with the QDR, we absolutely must transform the acquisition (and sustainment) process."

SecDef Snowflake

October 21, 2004

Need an adaptive and deliberate acquisition processes

The President's Management Agenda (PMA)

"…dedicated to ensuring that the resources entrusted to the federal government **are well managed and wisely used.** We owe that to the American people."

SECDEF - Transformation and Joint Warfighting

- DoD Transformational Planning Guidance
- FY 2005 Top 10 Priorities
- Balanced Score Card / Risk Ma

Office of the Under Secretary of Defense for Acquisition, Technology, & Logistics

1. Acquisition Excellence with Integrity
2. Logistics: Integrated and Efficient
3. Systems Integration & Engineering for Mission Success
4. Technology Dominance
5. Resources Rationalized
6. Industrial Base Strengthened
7. Motivated, Agile Workforce

AT&L Seven Goals Support PMA and SECDEF

Acquisition Excellence with Integrity

- ✓ **Bring Joint Capabilities Perspective to Acquisition**
  - Conduct **Senior Leadership Reviews** for each Functional Capability Area
  - Re-structure PDM to **Enforce Results** of Senior Leadership Reviews in the Resource Process
  - Transition from "System Focused" to **Capabilities-Based DAES Reviews**
- ✓ **Increase Accuracy and Credibility of Cost Estimates**
- ✓ **Shorten Acquisition Cycle Time**
  - Increase use of **evolutionary acquisition including spiral development**
  - Maximize use of **mature and commercial technology**
  - Expand use of technology demonstrations (ACTD/ATD) - **enter acquisition process "closer to production"**.

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Logistics: Integrated and Efficient

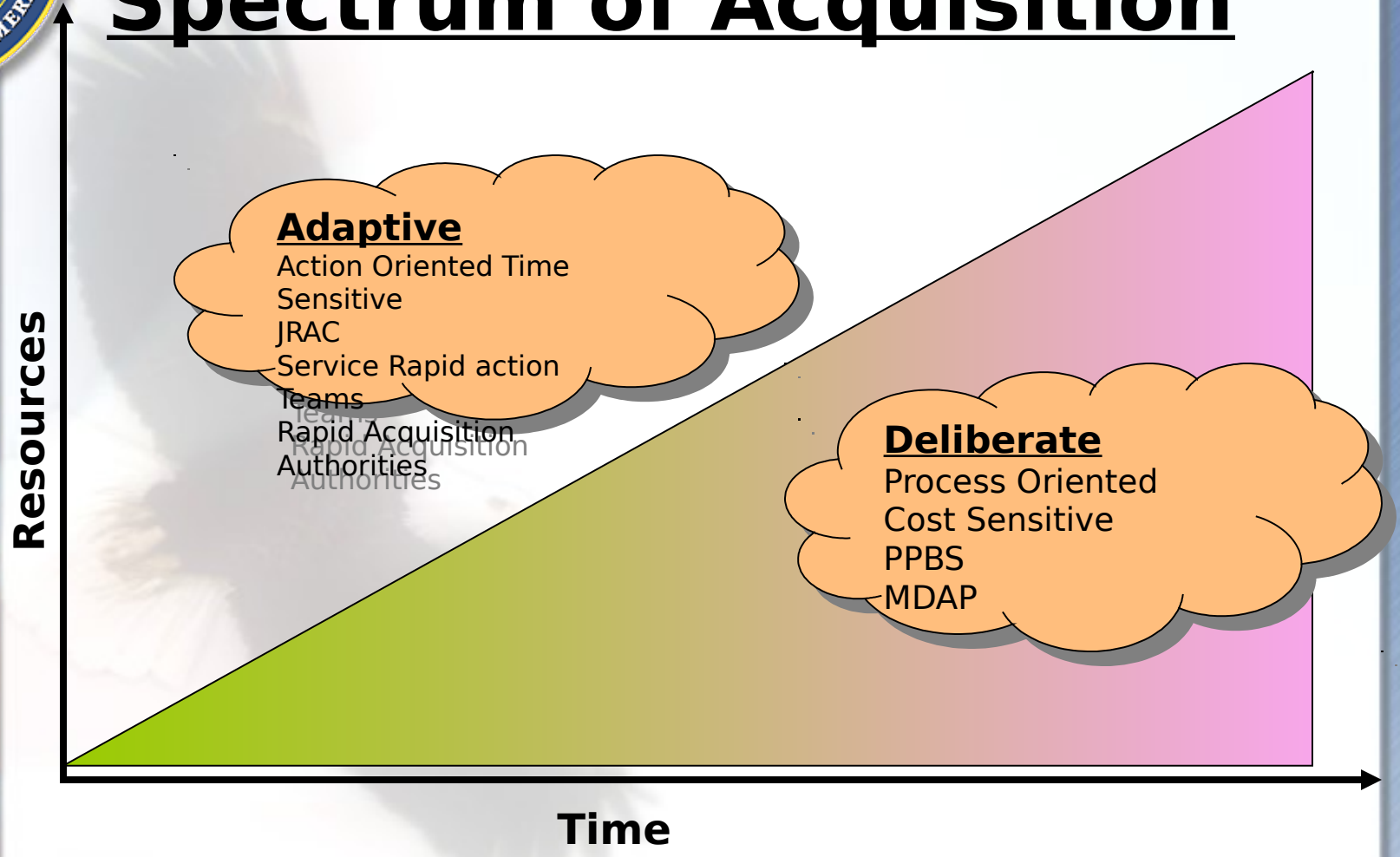
- ✓ RFID
- ✓ Enterprise Integration
- ✓ Expand End-to-End Policies
- ✓ Reliable Delivery
- ✓ Weapon System Support
- ✓ Sustain Weapon System Material Readiness
- ✓ Corrosion Control

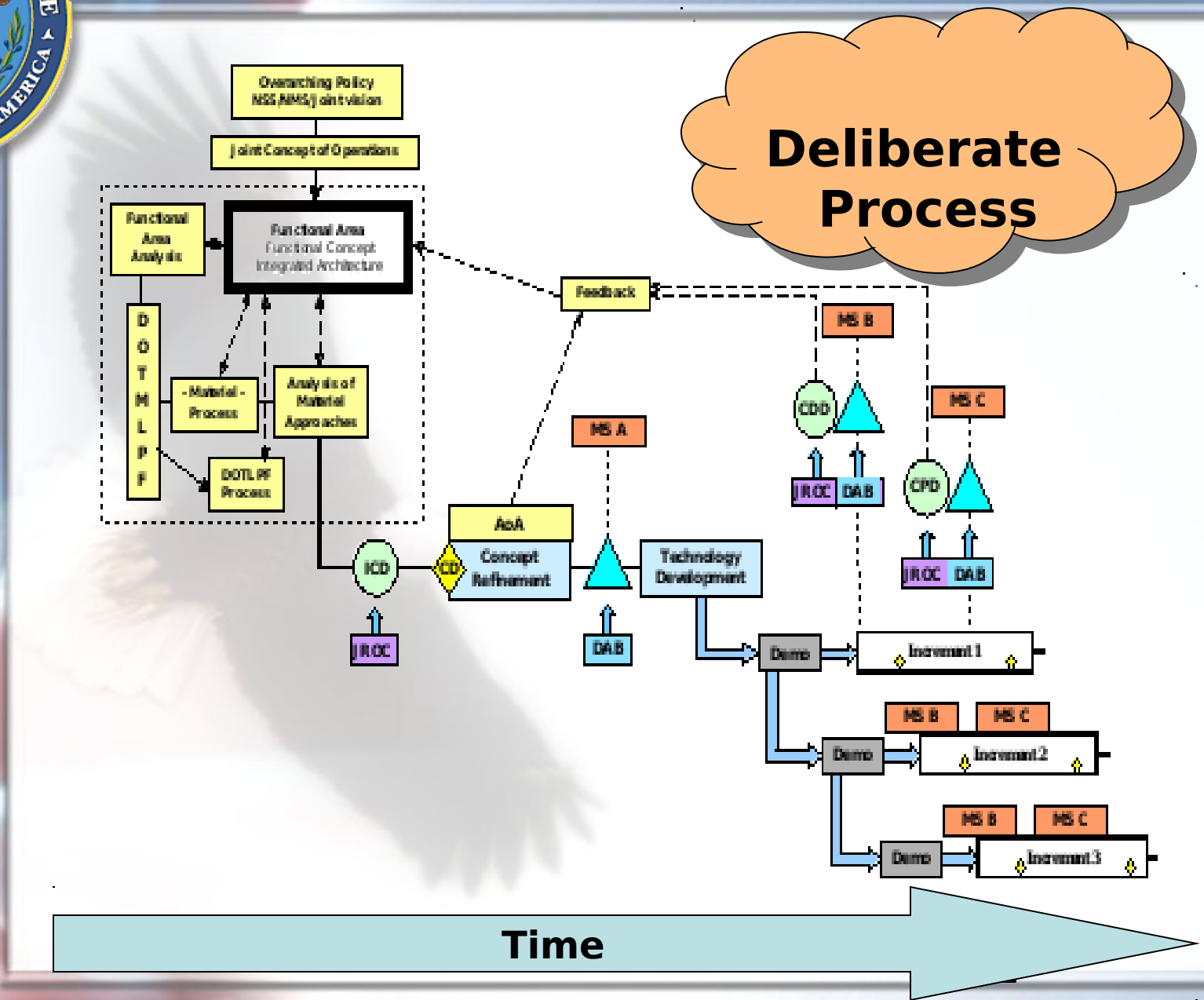
Logistics: Integrated and Efficient

Resources Rationalized

- ✓ **Resource joint warfighting capabilities** (Link resources to capabilities-based approach to enhance Joint warfighting capability)
- ✓ **Rationalize infrastructure** to support joint warfighting capabilities (BRAC, RRPI, Global Posture/Basing Strategy)
- ✓ **Achieve domain owner objectives** (Fundamental business process change and streamlining)
- ✓ **Rationalize contracting** (Business process streamlining)
- ✓ **Enhance outsourcing / competitive sourcing** (Revised OMB A-76)

Spectrum of Acquisition




Deliberate Process
Overarching Policy NSS/NMS/Joint vision
Joint Concept of Operations
Functional Area Analysis
Functional Area Functional Concept Integrated Architecture
DOTMLPF
- Material - Process
Analysis of Material Approaches
DOTLPF Process
Feedback
ICD
JROC
CD
AoA
Concept Refinement
MS A
DAB
Technology Development
CDD
JROC
DAB
MS B
MS C
CPD
JROC
DAB
Demo
Increment 1
MS B
MS C
Demo
Increment 2
MS B
MS C
Demo
Increment 3
Time

DoD initiatives

- Army's Rapid Equipping Force (REF)
- Army uses the Rapid Fielding Initiative (RFI)
- Combating Terrorism Technology Task Force (CTTTF)
- Joint Capability Technology Demonstrations (JCTD)

DoD initiatives (cont.)

- Laboratories develop technologies that meet immediate warfighter needs
- Joint IED Defeat Task Force
- The Joint Staff is implementing a new procedure for the rapid validation and resourcing of urgent operational needs
- Rapid Acquisition Authority

DoD initiatives

- **Despite most necessary authorities (to push equipment/services to the warfighter) already existing, process very often still stifled**

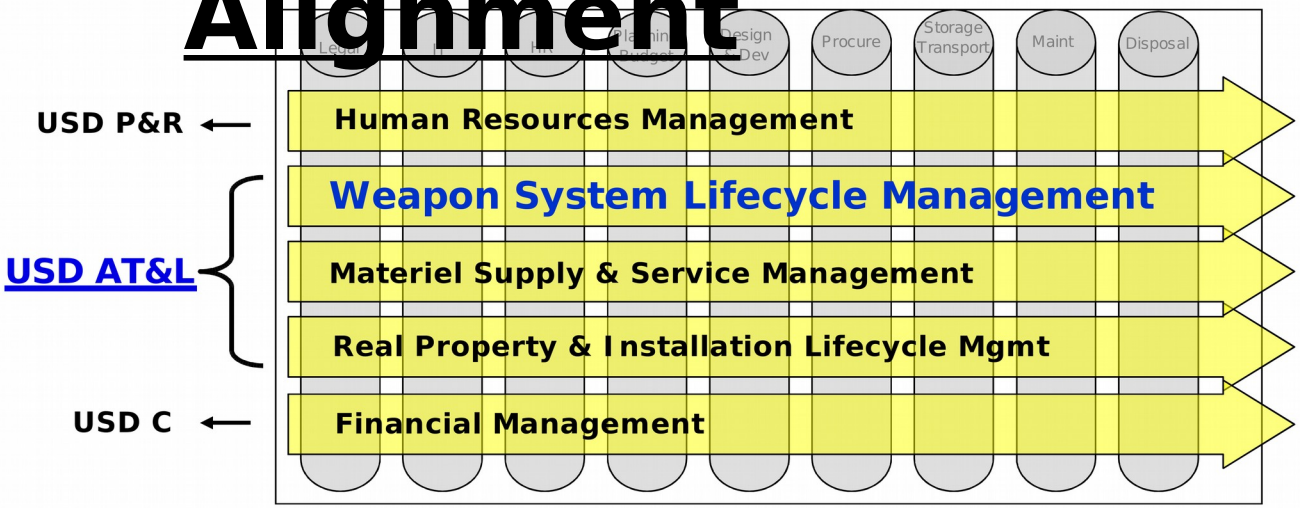
> ***"It's a lot easier if stuff is invented in IRAQ, then you can avoid a lot of bureaucracy and get it straight to the soldier."*** **Army Rapid Equipping Force**

- **Establish an OSD Joint Rapid Acquisition Cell (JRAC)**
  - **Responsible to the Secretary of Defense through Under Secretary of Defense (Acquisition Technology & Logistics)**
  - **Monitors, coordinates and facilitates meeting the Combatant Commander's Urgent Operational Acquisition Needs**
  - **Provides visibility of needs for special joint efforts such as the IED Task Force and the Combating Terrorism Technology Task Force**

Transformational Initiatives

- *"Transform business operations to achieve improved warfighter support……"*
  - Greater business speed, flexibility, agility to match warfighter needs
  - Enable costs reductions/efficiencies in the business mission area
- *"…..while enabling financial accountability across DoD."*
  - Enhanced credibility via external measures/audiences
  - Broad, accurate and timely information visibility for informed decision-making
- BMMP Realignment Principles
  - DoD Business Enterprise Clarity
  - Tiered Accountability
  - Horizontal Business Transformation Focus
  - Business Alignment to Warfighter Needs
  - Capabilities, not Systems, as Deliverables

Business Mission Alignment



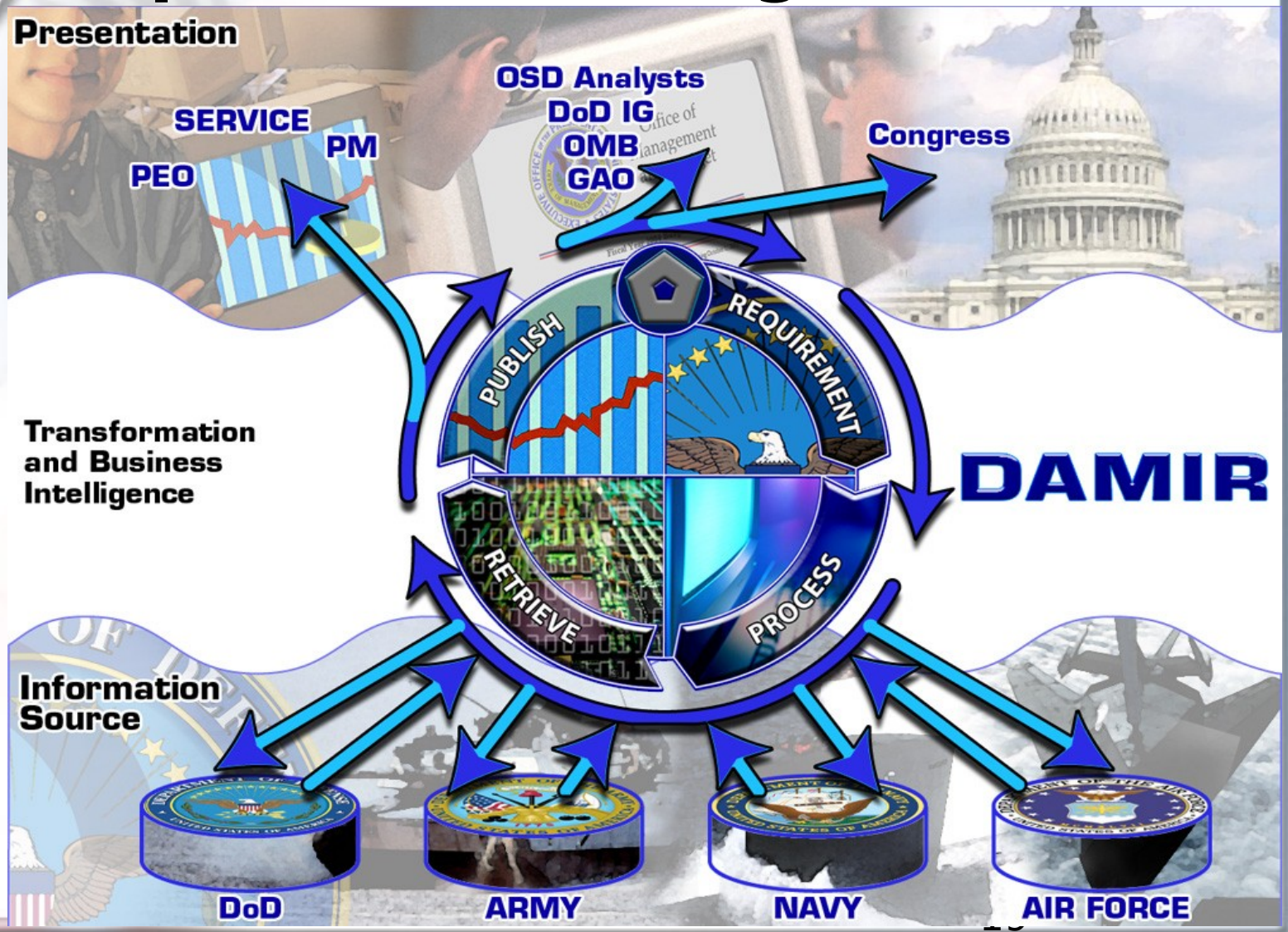
- Five core business missions defined crossing all functional silos.
  - Priority will be placed on delivering end-to-end business mission capability/functionality
  - Each business mission area will be led by the appropriate USD, and will ensure senior warfighter perspective/leadership in development of transformation priorities
  - Business mission owners will ensure alignment of transformation investments to the improvement of end-to-end mission capability for warfighters. These owners may delegate this authority to appropriate leaders as needed

Defense Acquisition Management Information Retrieval (DAMIR)

A capability that….

- Enables OSD to better perform its acquisition oversight role
- Is responsive to OMB and Congressional needs
- Leverages existing data sources
- Easily enables improvements to new/better data
- Reduces non-value added workload up and down the chain
- Promotes net-centric information

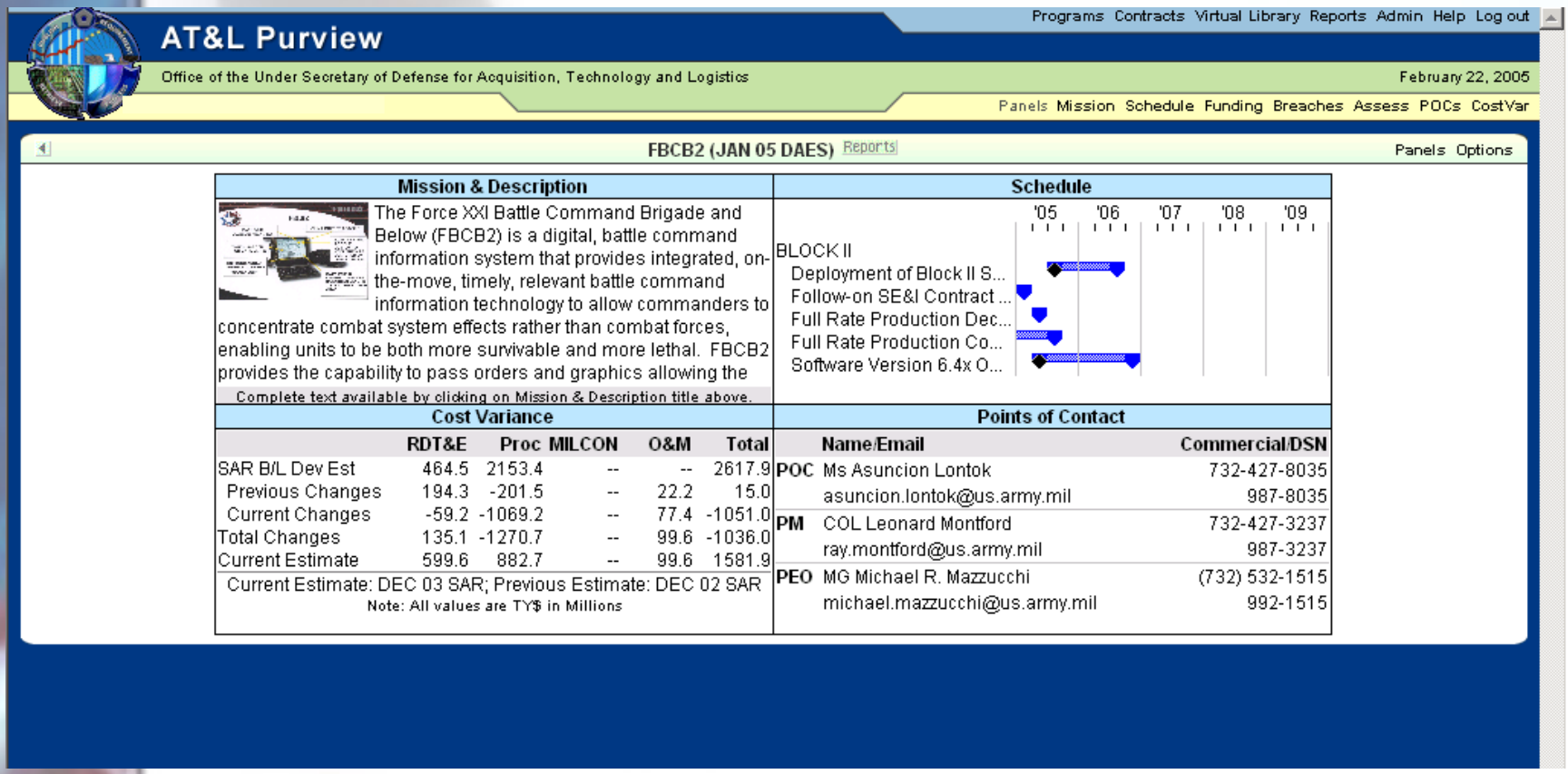
Acquisition Oversight Vision



DAMIR

- **Structured Data (Purview)**
  - Web-based application that accesses Acquisition information from disparate sources.
  - Consists of presentation layer, web services data “pull” software, and change management.
  - Pull data from Services.
  - Users share the same data..
  - Access provided to OSD, Joint Staff, Services, Program Offices and Congress.
- **Unstructured Data**
  - Virtual Library.

DAMIR Purview – FBCB2



AT&L Purview

Programs Contracts Virtual Library Reports Admin Help Log out

Office of the Under Secretary of Defense for Acquisition, Technology and Logistics

February 22, 2005

Panels Mission Schedule Funding Breaches Assess POCs CostVar

FBCB2 (JAN 05 DAES) Reports

Panels Options

Mission & Description

The Force XXI Battle Command Brigade and Below (FBCB2) is a digital, battle command information system that provides integrated, on-the-move, timely, relevant battle command information technology to allow commanders to concentrate combat system effects rather than combat forces, enabling units to be both more survivable and more lethal. FBCB2 provides the capability to pass orders and graphics allowing the

Complete text available by clicking on Mission & Description title above.

Schedule

'05 '06 '07 '08 '09

BLOCK II
Deployment of Block II S...
Follow-on SE&I Contract ...
Full Rate Production Dec...
Full Rate Production Co...
Software Version 6.4x O...

Cost Variance

	RDT&E	Proc	MILCON	O&M	Total
SAR B/L Dev Est	464.5	2153.4	--	--	2617.9
Previous Changes	194.3	-201.5	--	22.2	15.0
Current Changes	-59.2	-1069.2	--	77.4	-1051.0
Total Changes	135.1	-1270.7	--	99.6	-1036.0
Current Estimate	599.6	882.7	--	99.6	1581.9

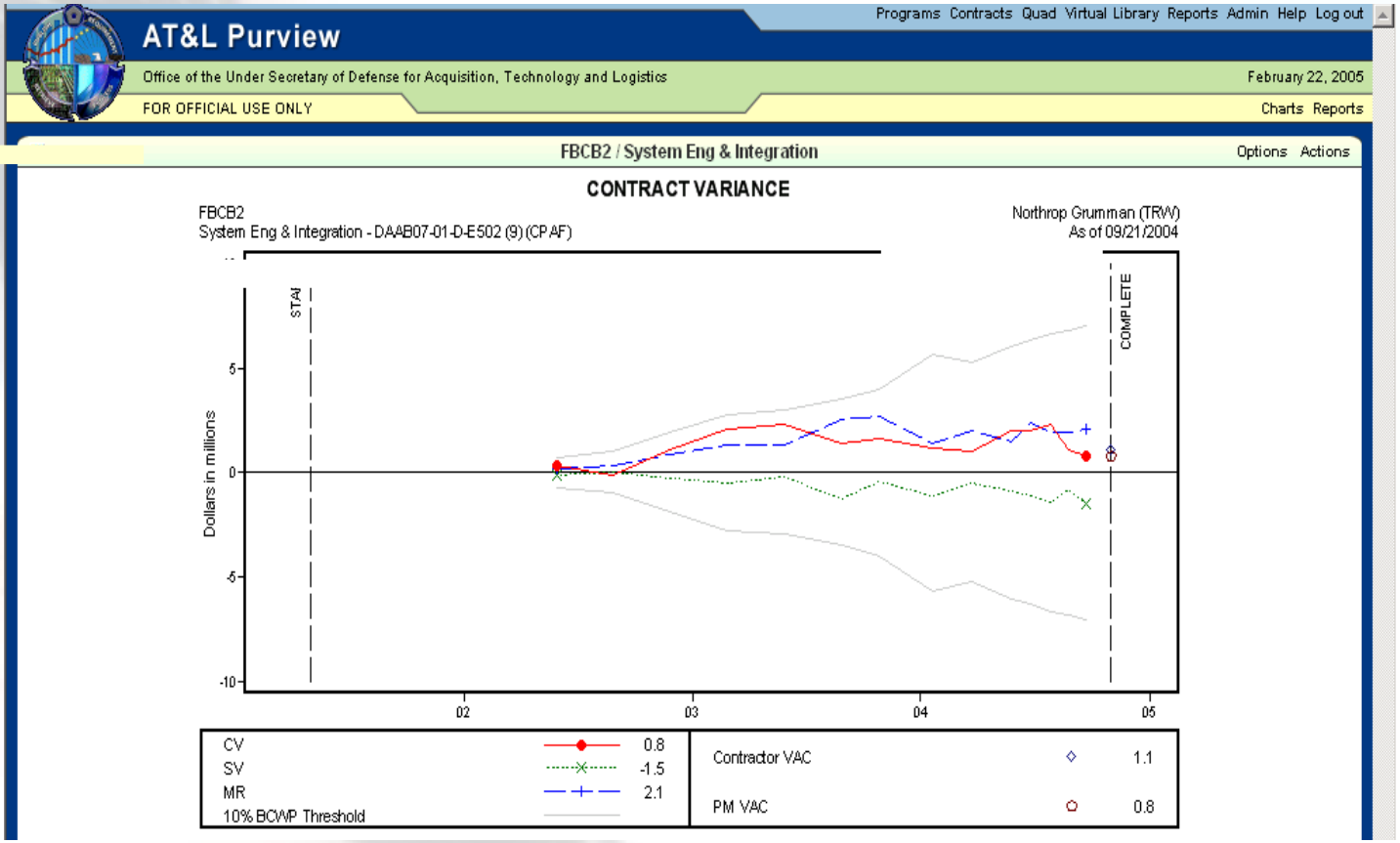
Current Estimate: DEC 03 SAR; Previous Estimate: DEC 02 SAR

Note: All values are TY$ in Millions

Points of Contact

	Name/Email	Commercial/DSN
POC	Ms Asuncion Lontok	732-427-8035
	asuncion.lontok@us.army.mil	987-8035
PM	COL Leonard Montford	732-427-3237
	ray.montford@us.army.mil	987-3237
PEO	MG Michael R. Mazzucchi	(732) 532-1515
	michael.mazzucchi@us.army.mil	992-1515

DAMIR Purview – FBCB2



Military Equipment Valuation (MEV)

- **Vision**
  - Military equipment is properly accounted for and reported in time to be of use to decision makers and for financial reporting.
- **Mission**
  - Identify and lead the development of short/mid-term and long term solutions to comply with Governmental Accounting Standards. Solutions include: policies, procedures, business enterprise architecture, requirements development and systems.
- **Goals**
  - Determine the value of military equipment, such as aircraft, ships, combat vehicles, and weapons, and include this information in the periodic financial statements prepared by the DoD.

Military Equipment Valuation (MEV) Status

- Number of programs: 1,055
- Valuations completed through February 2005: 547
- Valuations in-progress: 147
- FY2005 program valuations goal (cumulative): 968
- Accounting systems interfaced with: 16
- Property Accountability systems interfaced with: 28
- Data elements in accounting/accountability systems: >600

Military Equipment Valuation – F/A–18 E/F

Program Balances

Estimated Cumulative Cost of F/A-18 E/Fs in Service	A	$12,404.5
Accumulated Depreciation	B	$1,974.7
Net Book Value of F/A-18 E/Fs in Service	C = A - B	$10,429.8
Total Work-in-Process	D	$3,381.3
Cumulative Cost of F/A-18 E/Fs in Service and Work-in-Process	E = A + D	$15,785.7
Annual Depreciation Expense	F	$618.2

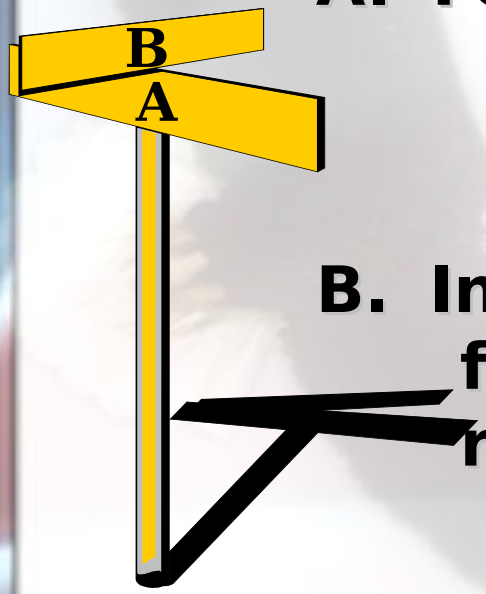
Estimated Cost per F/A-18 E/F

Total Estimated Program Costs	G	$28,170.1
Total Number of F/A-18 E/Fs	H	352
Estimated Cost per F/A-18 E/Fs	I = G / H	$80.0

As of April 19, 2004
$ in Millions

Cost Research Challenges

Cost Research Crossroads



A. Focus on pure cost estimating?

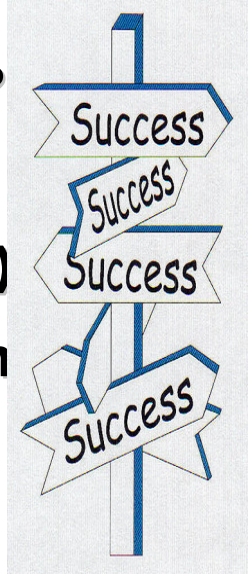
OR

B. Incorporate other real world factors that affect estimate results?

Cost Research Crossroads

Know Your Customer's Needs and Estimate Drivers Identified

- **Who** is involved in the estimate?
- **How** is the estimate prepared?
- **What** is known (scope definition)
- **Other factors** affecting the estim



B. Incorporate other real world factors that affect estimate results.

Cost Research Opportunities

As of: 28 Apr 05

- Joint Battlespace Awareness
- Joint Command and Control
- Joint Network Operations
- Joint Interagency Coordination
- Joint Public Affairs Operations
- Joint Information Operations
- Joint Protection
- Joint Logistics
- Joint Force Generation
- Joint Force Management
- Joint Homeland Defense
- Joint Strategic Deterrence
- Joint Shaping & Security Cooperation
- Joint Stability Operations
- Joint Civil Support
- Joint Non-Traditional Operations
- Joint Access & Access Denial Operations
- Joint Land Control Operations
- Joint Maritime/Littoral Control Operations
- Joint Air Control Operations
- Joint Space Control Operations

SECDEF Memo approving 21 Joint Capability Areas signed May 6, 2005

First step toward something different from the Major Force Programs of the FYDP that have been in place for 40 years!

Cost Research Opportunities

As of: 28 Apr 05

- **Joint Battlespace Awareness**
  Collection & Monitoring (Enemy, Neutral, Friendly), Exploitation and Analysis; Modeling, Simulation, and Forecasting; Knowledge Management
- **Joint Command and Control**
  Leadership, Decision Making, Situational Understanding/ Common Operational Picture, COA/Plan Development, Orders Dissemination, Collaboration, Liaison
- **Joint Network Operations**
  Physical-Transport, Services, Info Assurance, Knowledge Sharing, and Applications
- **Joint Interagency Coordination**
  Interagency Cooperation Activities, Info Mgmt in Interagency Processes, Non-Governmental/Private Volunteer Organization Integration
- **Joint Public Affairs Operations**
  Public Affairs, Domestic & Foreign Public Information, Public Diplomacy, Media Relations, Internal Information, Combined/Joint Information Bureaus, Rapid Response to Misinformation, Counter-Propaganda
- **Joint Information Operations**
  OPSEC, Computer Network Ops (CND, CNA), PSYOP, Military Deception, Electronic Warfare
- **Joint Protection**
  Protect Personnel & Physical Assets, Antiterrorism, Noncombatant Evacuation Ops, Personnel Recovery, Internally Displaced Persons Mgmt, Enemy Prisoner of War Mgmt, WMD Defense
- **Joint Logistics**
  Joint Deployment/Rapid Distribution, Agile Sustainment, Operational Engineering, Multinational Logistics, Force Health Protection, Logistics Information Fusion, Joint Theater Logistics Management
- **Joint Force Generation**
  Organizing, Training (Individual & Collective), Equipping, Education, Recruiting, Manpower, Administration, Infrastructure Management
- **Joint Force Management**
  Global Posture, Command Relationships, Global Visibility, Global Force Management, Adaptive Planning, Mission Rehearsal

SECDEF Memo approving Tier 1 & Tier 2 Joint Capability Areas signed May 6, 2005

First step toward something different from the Major Force Programs of the FYDP that have been in place for 40 years!

Cost Research Opportunities

As of: 28 Apr 05

- **Joint Homeland Defense**
  Security of the Mobilized Force, Bases, Reach-back Infrastructure, National Infrastructure, Continuity of Operations, Securing Domestic Approaches & Territory, Critical Infrastructure Protection (CIP), Population Protection, Homeland Air & Missile Defense
- **Joint Strategic Deterrence**
  Overseas Presence, Force Projection, Global Strike
- **Joint Shaping & Security Cooperation**
  DoD Support to Nonproliferation, Security Assistance, Theater Security Cooperation, Inducements
- **Joint Stability Operations**
  Peace Operations, Security, Humanitarian Assistance, Foreign CM, Civil Affairs, Reconstruction, Transition
- **Joint Civil Support**
  Military Assistance to Civil Authorities (Military Support to Civil Law Enforcement Activities (MSCLEA) & Military Assistance to Civil Disturbances (MACDIS)), Consequence Management (Domestic), Counter-Drug Operations, Continuity of Government
- **Joint Non-Traditional Operations**
  Unconventional Warfare, Direct Action, Counterterrorism, Counterproliferation of WMD, Foreign Internal Defense, Special Recon
- **Joint Access & Access-denial Operations**
  Operational Access, Forcible Entry, LOC Protection, Freedom of Navigation, Basing, Seabasing, Blockade, Quarantine
- **Joint Land Control Operations**
  Offensive Land Ops, Defensive Land Ops, Retrograde Land Ops, Operational Mobility, Control Territory, Populations, and Resources
- **Joint Maritime/Littoral Control Operations**
  Surface Warfare, Undersea Warfare, Maritime Interdiction Operations
- **Joint Air Control Operations**
  OCA, DCA, SEAD, Strategic Attack, Theater Air & Missile Defense, Force & Supply Interdiction, Airspace Control
- **Joint Space Control Operations**
  Offensive Counterspace Operations, Defensive Counterspace Operations

SECDEF Memo approving Tier 1 & Tier 2 Joint Capability Areas signed May 6, 2005

First step toward something different from the Major Force Programs of the FYDP that have been in place for 40 years!

Opportunity Costs

- **Funding future Cost Research estimates are:**
  - Basis for business decisions.
  - Driven by team issues as well as scope definition and cost estimating.
  - Measurable.
- **Cost Research improvements are short term and long term.**
- **Continue partnering to fund Cost Research**

Challenge and Homework

Challenge:

- **Netcentricity goals brings a whole new set of challenges for the cost community.**
- **Electronic-intensive systems integrated based on major software development programs.**

Homework:

- **The cost community needs to place greater emphasis on collection of costs related to both areas.**

Challenge and Homework

Challenge:

The Department established 6 pilot programs to support its Performance Based Logistics (PBL) initiative (MID 917). Current cost accounting systems are not conducive to the collection of platform-specific costs, and our ability to confirm that estimated savings and cost avoidance is actually occurring.

Homework:

- The cost community needs to develop such structures in close coordination with program and budget offices.
- The cost community needs to work with the logistics community to ensure that the requisite level of visibility into contractor costs is retained.

version 4.5(O&S)

SAMPLE Investment Program Funding & Quantities

($ in Millions / Then Year)	Prior	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY06-11	To Comp	Prog Total
RDT&E											
Prior $ (PB 05)	106	17	7	17	7	0	0	0	31	0	155
Current $ (PB 06)	106	22	5	1	7	17	7	2	40	0	168
Delta $ (Current - Prior)											13
Required $											341
Delta $ (Current - Required)											173
PROCUREMENT											
Prior $ (PB 05)											2211
Current $ (PB 06)											2224
Delta $ (Current - Prior)											13
Required $											1453
Delta $ (Current - Required)											771
O&M											
Prior $ (PB 05)											98
Current $ (PB 06)											126
Delta $ (Current - Prior)											28
Required $											1047
Delta $ (Current - Required)											(921)
TOTAL											
Prior $ (PB 05)											756
Current $ (PB 06)											911
Delta $ (Current - Prior)	18	(27)	(40)	(70)	(42)	124	106	86	164	0	155
Required $	188	121	149	168	143	3	0	32	495	5516	6320
Delta $ (Current - Required)	(11)	(17)	(50)	(61)	(42)	123	106	59	135	(5516)	(5409)
QUANTITIES											
Prior (PB 05)	0	339	552	681	587	0	0	124	1944	0	2283
Current (PB 06)	0	239	445	467	376	382	379	358	2407	0	2646
Delta Qty (Current - Prior)	0	(100)	(107)	(214)	(211)	382	379	234	463	0	363
Required Qty	0	250	440	450	376	382	379	332	2359	0	2609
Delta Qty (Current - Required)	0	(11)	5	17	0	0	0	26	48	0	37

Ref: Total Life Cycle Systems Management (TLCSM) and Performance Based Logistics (PBL)

PM to refine/complete/approve and fully fund Life Cycle Cost estimates to product support strategy/sustainment approach within the overall Acquisition Strategy (ASR).

Use IPT Funding Worksheet: "***IPT O&S Briefing Slide 2***" included

DoD Website Sources: (cut & paste below links to web brower)

TLCSM & PBL

http://akss.dau.mil/dag/GuideBook/IG_c5.4.3.2.asp

http://akss.dau.mil/dag/Guidebook/IG_c5.5.3.asp

Operating & Support Cost Estimating Structures

https://acc.dau.mil/simplify/ev.php?ID=1457_201&ID2=DO_TOPIC

Inworks to Add a New Spruill "O&S Funding Chart" to Better Support IPTs/DAB Reviews

version 4.5(O&S)v2

SAMPLE Estimated Operating & Support Investment Program Funding

Working Draft

($ in Millions / Then Year)

	Current (FYDP FY06-11)				FYXX Projected Required						TLCSM Percentage Deltas	
	RDT&E	PROCUREMENT	O&M	Overall Unit of Measure or Key Performance Metric(s)	RDT&E	PROCUREMENT	O&M	MILPERS	MILCON	Overall Unit of Measure or Key Performance Metric(s)	Current vs. Projected Required	Estimate TLCSM To Com
						O&S						
1.0 UNIT PERSONNEL				• Block supports bullet statement(s) or free text	0	0			0	• Block supports bullet statement(s) or free text	14%	466
2.0 UNIT OPERATIONS	0	0	0	• Block supports bullet statement(s) or free text	0	0	0	12	12	• Block supports bullet statement(s) or free text	0%	52
3.0 MAINTENANCE	20	126	70	• Block supports bullet statement(s) or free text	60	453	200	100	0	• Block supports bullet statement(s) or free text	27%	1029
4.0 SUSTAINING SUPPORT	0	0	10	• Block supports bullet statement(s) or free text	0	222	0	0	0	• Block supports bullet statement(s) or free text	0%	2403
5.0 CONTINUING SYSTEM IMPROVEMENTS	0	0	0	• Block supports bullet statement(s) or free text	0	0	60	0	0	• Block supports bullet statement(s) or free text	0%	80
6.0 INDIRECT SUPPORT	85	125	6	• Block supports bullet statement(s) or free text	0	800	426	44	0	• Block supports bullet statement(s) or free text	17%	1486
TOTAL	113	251	136		60	3481	796	667	12		10%	5516

Adjust Logistics Planning for Overall O&S realism

Adjust Logistics Planning for Overall O&S realism

Sanity Check Way Ahead: The plan is to validate with program office(s) in order to better understand the overall O&S realism, feasibility, and practical implementation to produce for OIPT milestones and other reviews.

Total Life Cycle Systems Management (TLCSM) To Comp	
RDT&E TLCSM Sum Required	173
O&S TLCSM Sum Required	
Procument	3732
O&M	932
MILPERS	667
MILCON	12
Estimated TLCSM To Comp	5516

Closing Thoughts

- **DoD putting more focus on importance the Joint Capability Areas and total life-cycle cost estimates.**
- **Our goal is to ensure performance management processes are effective, consistent, and reflective of current industry best practice.**
- **We need your continued support to bring about change transition.**

Working together is the key to delivering ever-present, credible capability-based cost estim

Backup

Cost Research Symposium

Background Information

Annual Cost Research Symposium

- Since 1989, this Cost Research Symposium has been held every year. 2005 marks the 17th year of the annual Cost Research Symposium.
- The IDA Cost Research Symposium is jointly sponsored by the OSD CAIG and IDA.
- ~50 Attendees: By Invite Only

  Key Cost Managers from the military departments and MDA, FFRDC research managers, DAU reps and a few international cost managers. These folks make decisions on the allocation of cost research funds.

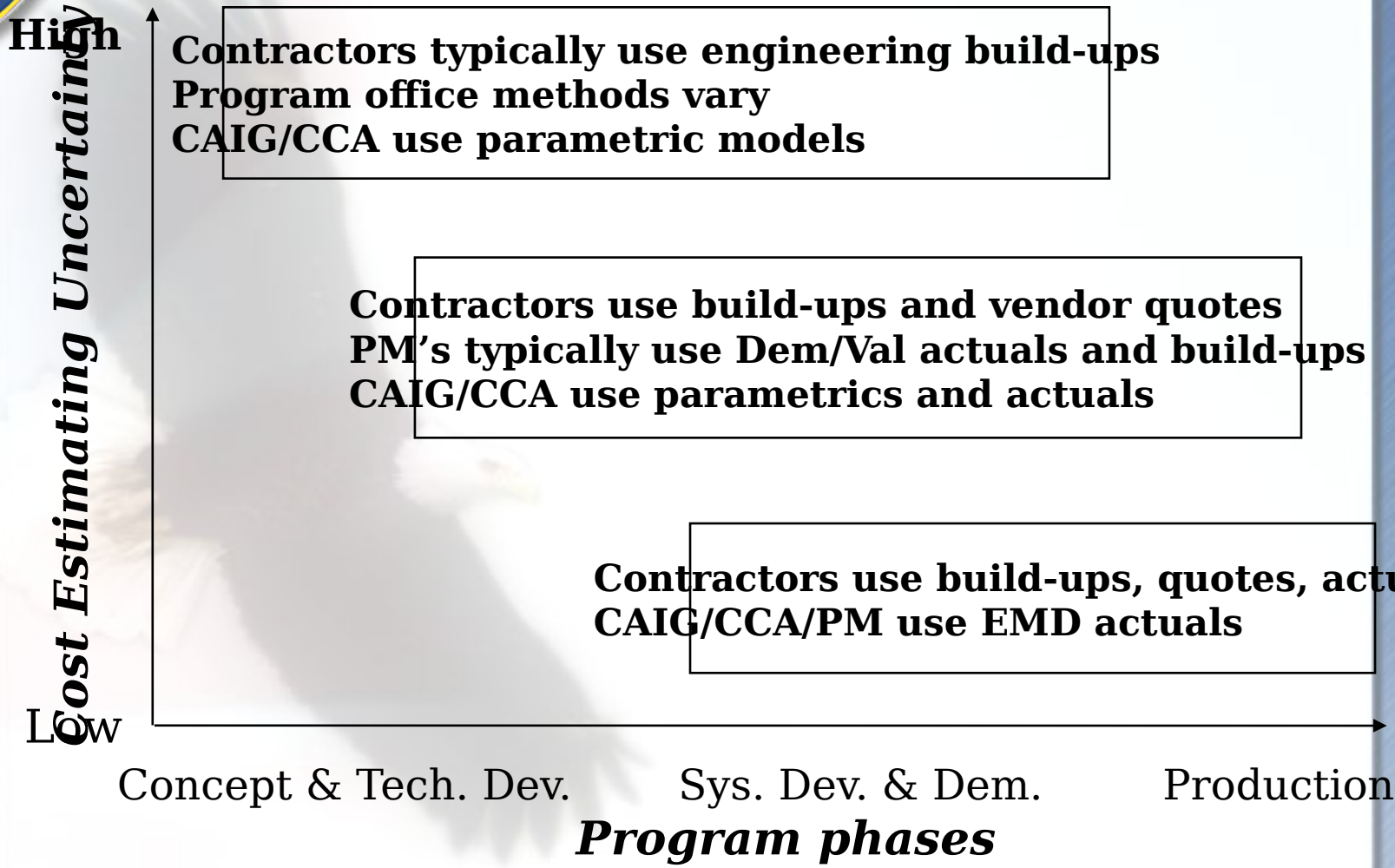
Cost Research

Background Information

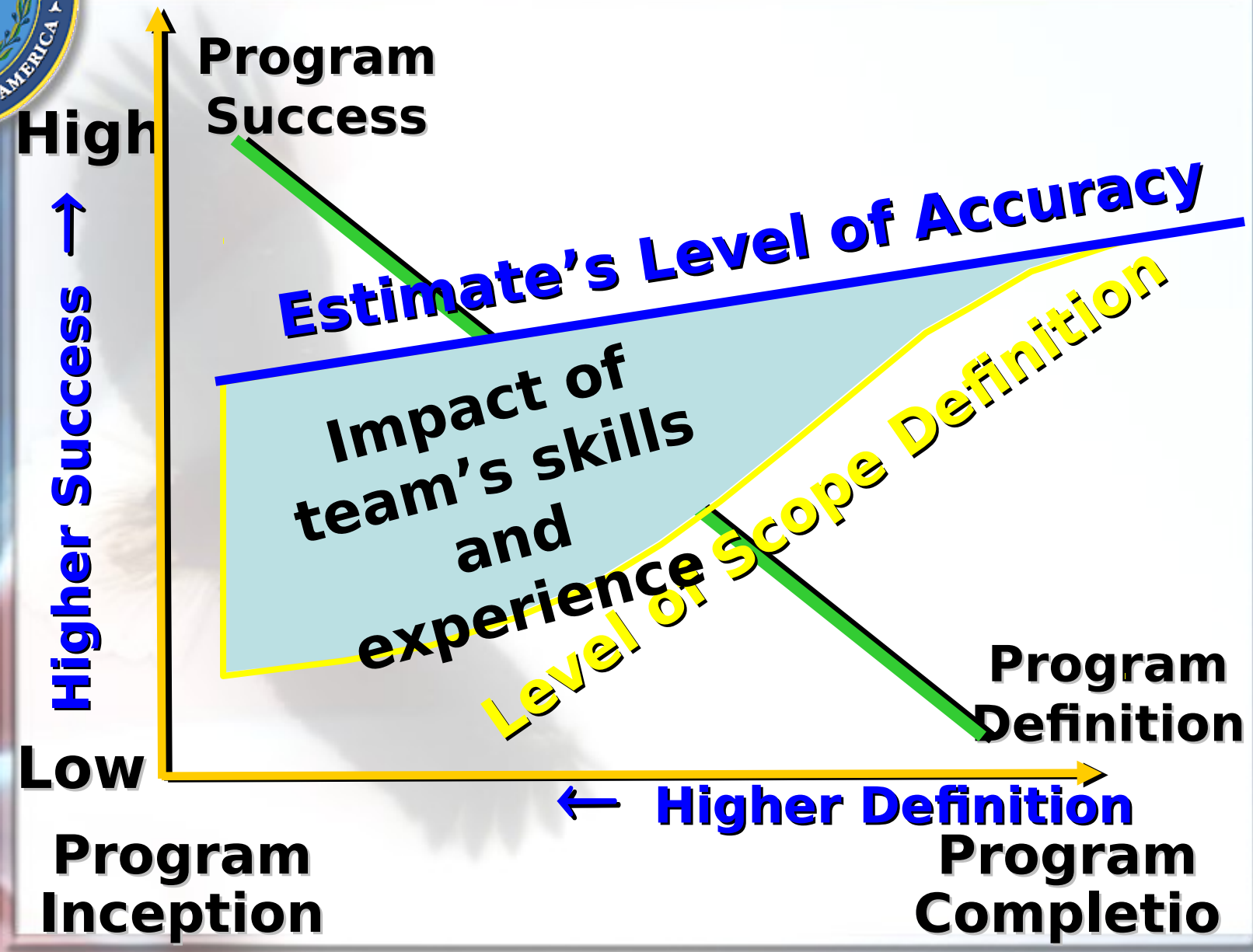
Cost Research Approaches

- **Use best available data sources to populate models**
  - Actual cost data from earlier program phases
  - CCDRs from analogous programs
  - Recent vintage CERs
  - Historical learning-curve slope realizations
- **Avoid "canned" models**
  - Black-box nature of these models inhibits insight
  - Input parameters are too subjective
- **Capture technical and schedule risk through in-depth program knowledge and historical comparisons**

Current Cost Estimating Techniques



Estimate's Level of Accuracy



OSD CAIG Estimates

Background Information

CAIG Customers

- SECDEF/DEPSECDEF
- **USD(AT&L): DAB reviews & special studies**
- USECAF: DSABs on Space Programs
- USD(I)/ASD(NII): Intelligence and C2 programs (Titles 10 & 50)
- MDA: MOU
- PA&E: PPBES costs & special studies
- Others: NASA, USD(C), Congress, OMB

CAIG Supports Milestones

- Develop ICE and Compare to POE/CCP
- Prepare CAIG Summary Report for OIPT
- Document Findings and CAIG Estimate/Analysis
- CAIG Chairman Presents Findings to Committee
- Work Remaining Issues
- Pre-Brief D(PA&E) prior to the Defense Acquisition Board (DAB)
- Coordinate on Draft Acquisition Decision Memo

Budgeting to CAIG Estimate

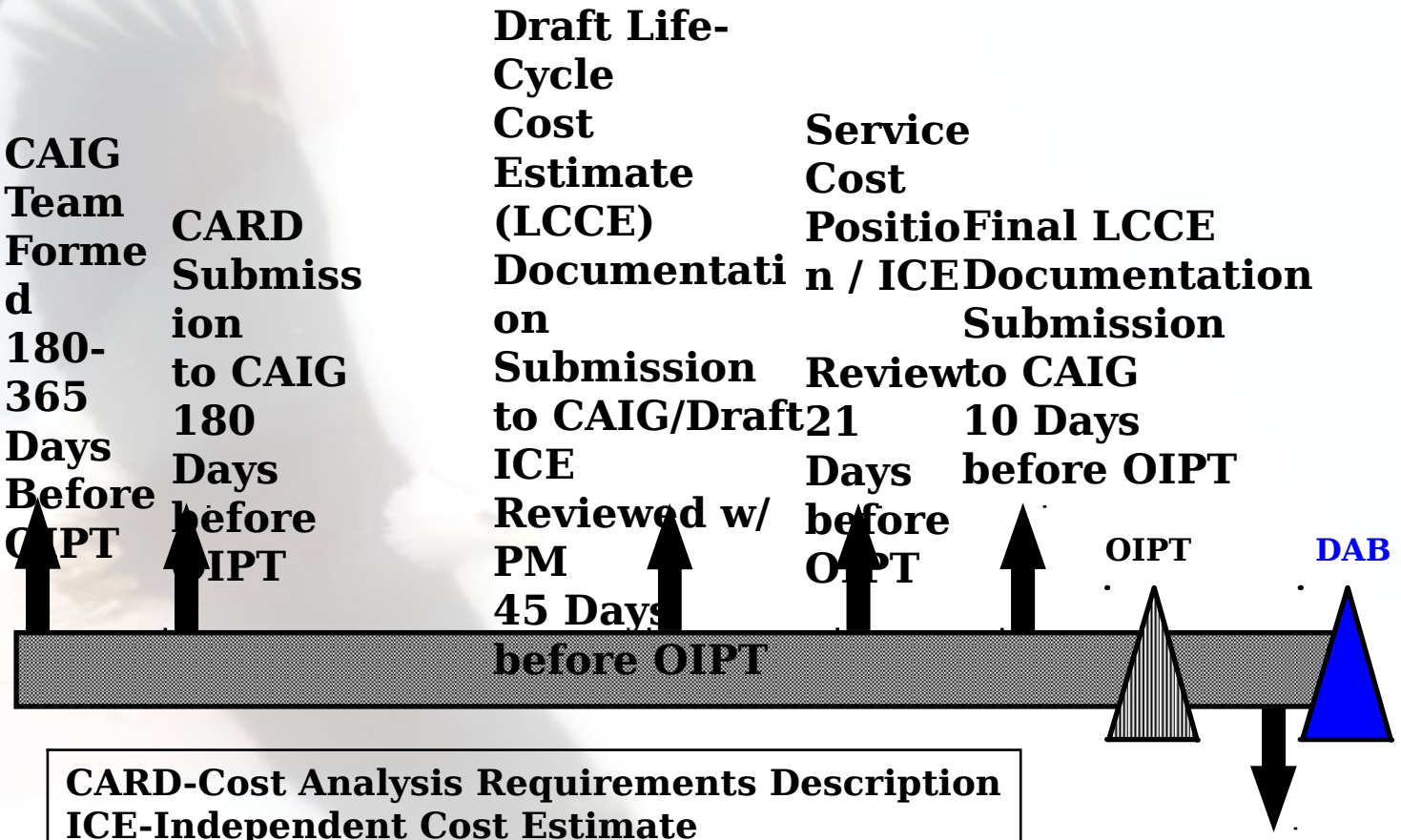
- Budgetary instructions to Services states:

  "In order to achieve program stability and avoid cost stretch-out, [the Services shall] properly price programs at not less than levels estimated by the Cost Analysis Improvement Group"

- New guidance has a few "execution" issues:
  - CAIG has been staffed and organized primarily to perform episodic reviews at milestones (and fit in other duties)
  - Continuous maintenance of program estimates generally not done
    - -Thus, demand by Services for current CAIG POM numbers often problematic
  - Demand for acquisition milestone reviews continues unabated
- Final resolution not clear
  - I
  - H

AT&L Supports Funding to Best Estimate Based on "Credible" Cost

Key Regulatory Costing Events


CAIG Team Formed 180-365 Days Before OIPT
CARD Submission to CAIG 180 Days before OIPT
Draft Life-Cycle Cost Estimate (LCCE) Documentation Submission to CAIG/Draft ICE Reviewed w/ PM 45 Days before OIPT
Service Cost Position / ICE Review 21 Days before OIPT
Final LCCE Documentation Submission to CAIG 10 Days before OIPT
OIPT
DAB
OIPT Report Provided to DAE before DAB

CARD-Cost Analysis Requirements Description
ICE-Independent Cost Estimate
OIPT-Overarching Integrated Product Team
DAB-Defense Acquisition Board
DAE-Defense Acquisition Executive
PM-Program Manager

Scope of the CAIG Estimates

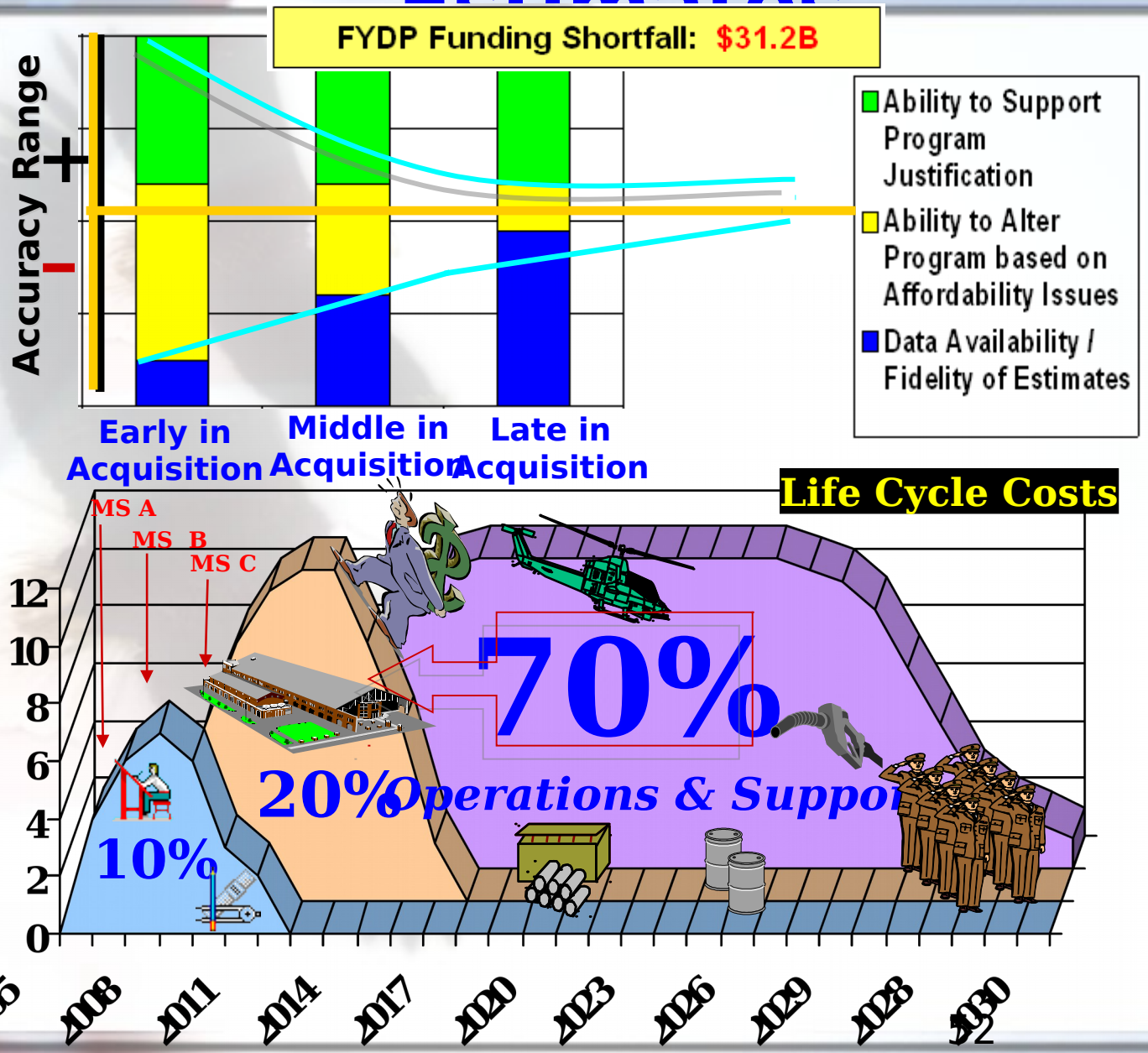
- **Full Life Cycle Costs- all phases of weapon-system**
  - Research Development Test & Evaluation
  - Hardware and Software
  - Supporting Data, Equipment, Training
  - Initial Spares
  - Military Construction (MILCON)
  - Modifications
  - Operations and Support Over System Life
    - Including Manpower
  - Environmental Cost -
    - Compliance, Demilitarization, Clean-Up, Disposal
- **Regardless of Funding Source**
- **Based Upon Program Described in the CARD**

Cost Analysis Requirements Description (CARD)

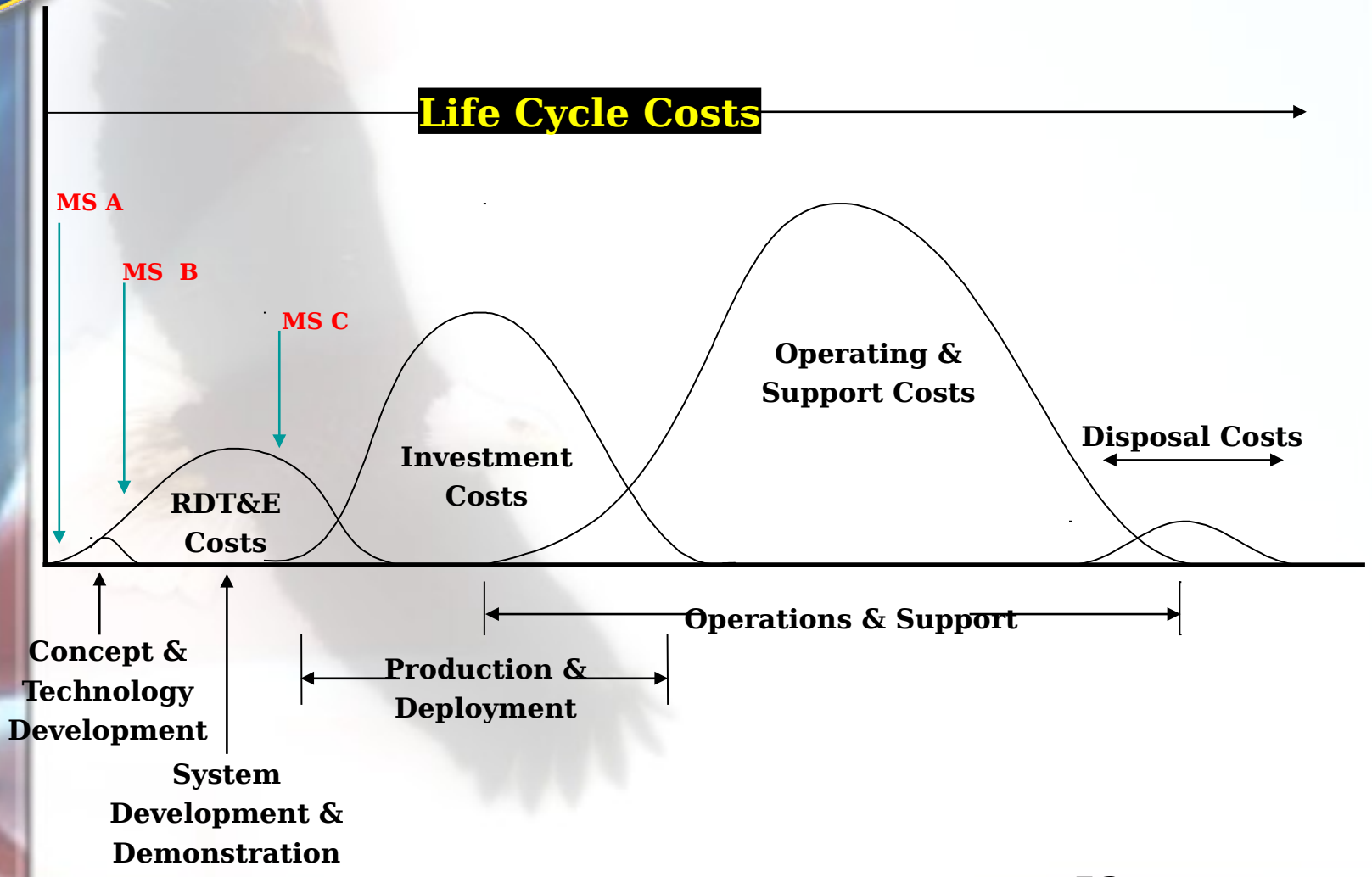
- Description of features pertinent to costing the system
- Quantitative descriptions of technical, physical, programmatic, and performance characteristics
- Common definition of system for costing purposes
- Should be completed 180 days prior to acquisition decision meeting

CARD requirements specified in DoD Manual 5000.4-M

Total Life Cycle Cost Estimates



Weapon System Timeline and Cost Categories



Research Accomplishments

- **Estimate Procedures**
  - Measure estimate quality.
  - Correlate estimates with their final cost.
  - Identify estimating improvement areas.
- **Estimate Models**
  - Predict accuracy from estimate scores.
- **Best Practices Guide**
  - Alignment, process, procedures

OSD Focus Areas for Enhancing Visibility of Operating & Support (O&S)

OSD CAIG
Operating & Support
Cost Element Structure (CES)

Big Changes in Cost

- **Cost Analysis Requirements Descriptions (CARDs)**
  - Describes system features pertinent to costing
  - Work begins six months before DAB
- **Integrated Product Teams (IPTs)**
  - Improves access to costing information
  - Provides problem-solving mechanism
- **Cost estimate structure**
  - Detailed estimate at level three or four WBS level
  - No longer high-level parametrics

Estimating since early 1990's

Roles of an O&S Cost Structure

- **Provides a common structure for cost estimates**
  - OSD(CAIG) reviews on MDAPs
- **Creates a common structure for Service cost data "VAMOSC" systems**
  - Complements service-unique data structures

O&S Estimating Structure

(Final Draft)

1.0 Unit Personnel
Costs of operators, maintainers, and other support personnel assigned to operating units. Includes military, civilian, and contractor personnel.

2.0 Unit Operations
Costs of unit operating material (e.g., fuel and training material), unit support services, and unit travel. Excludes all maintenance and repair material.

3.0 Maintenance
Costs of all maintenance other than maintenance personnel assigned to operating units. Includes contractor maintenance.

4.0 Sustaining Support
Costs of support activities other than maintenance which can be attributed to a system and are provided by organizations other than operating units.

5.0 Continuing System Improvements
Costs of hardware and software modifications to keep the system operating and operationally current. Excludes all costs of modification programs that qualify as Major Defense Acquisition Programs as well as any modifications or upgrades included in the acquisition cost estimate.

6.0 Indirect Support
Costs of support activities that provide general services that cannot be directly attributed to a system. Indirect Support is generally provided by centrally managed activities that support a wide range of activities.

O&S Estimating Structure

(Final Draft—2nd level)

1. Unit Personnel
- 1.1 Operations Personnel
- 1.2 Unit Maintenance Personnel
- 1.3 Other Direct Support

2. Unit Operations
- 2.1 Operating Material
- 2.2 Support Services
- 2.3 Temporary Duty

3. Maintenance
- 3.1 Organizational Maintenance
- 3.2 Intermediate Maintenance
- 3.3 Depot Maintenance

4. Sustaining Support
- 4.1 System Specific Training
- 4.2 Support Equipment Replacement
- 4.3 Sustaining Engineering and Program Management
- 4.4 Other Sustaining Support

5. Continuing System Improvements
- 5.1 Hardware Modifications
- 5.2 Software Maintenance and Modifications

6. Indirect Support
- 6.1 Installation Support
- 6.2 Personnel Support
  - 6.2.1 Personnel Administration (Personnel Acquisition , Individuals Overhead -TPPS)
  - 6.2.2 Personnel Benefits (Family Housing, Commissaries, Child & Family Support, DoD Schools)
  - 6.2.3 Medical Support
- 6.3 General Training and Education
  - 6.3.1 Basic & Initial Skill Training
  - 6.3.2 Educational Activities

Value of Cost Research

- Improves Current Policy/Guidance
- Proposes New Policy/Guidance
- Often Provides Follow-On Actions

Improves decision-making at all levels

AT&L Efforts to Strengthen the Visibility of the Operating & Support in IPTs/DAB Reviews

Acquisition Community-Wide Effort

- **Critical Success Factors**
  - Coordination and collaboration across organizational boundaries to provide the best possible support to the acquisition community
  - Collective pursuit of acquisition community transformation vision and goals
  - Unified coalition of acquisition leadership who actively communicate to stakeholders in “one voice”
  - Decision-making from an enterprise-perspective
  - Dedicated, knowledgeable change agents to plan for and execute transformation management activities within their communities

age acquisition leaders and stakeholders at all lev

version 4.5(O&S)

SAMPLE Investment Program Funding & Quantities

($ in Millions / Then Year)	Prior	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY06-11	To Comp	Prog Total
RDT&E											
Prior $ (PB 05)	106	17	7	17	7	0	0	0	31	0	155
Current $ (PB 06)	106	22	5	1	7	17	7	2	40	0	168
Delta $ (Current - Prior)											13
Required $											341
Delta $ (Current - Required)											173
PROCUREMENT											
Prior $ (PB 05)											2211
Current $ (PB 06)											2224
Delta $ (Current - Prior)											13
Required $											1453
Delta $ (Current - Required)											771
O&M											
Prior $ (PB 05)											98
Current $ (PB 06)											126
Delta $ (Current - Prior)											28
Required $											1047
Delta $ (Current - Required)											(921)
TOTAL											
Prior $ (PB 05)											756
Current $ (PB 06)											911
Delta $ (Current - Prior)	18	(27)	(40)	(70)	(42)	124	106	86	164	0	155
Required $	188	121	149	168	143	3	0	32	495	5516	6320
Delta $ (Current - Required)	(11)	(17)	(50)	(61)	(42)	123	106	59	135	(5516)	(5409)
QUANTITIES											
Prior (PB 05)	0	339	552	681	587	0	0	124	1944	0	2283
Current (PB 06)	0	239	445	467	376	382	379	358	2407	0	2646
Delta Qty (Current - Prior)	0	(100)	(107)	(214)	(211)	382	379	234	463	0	363
Required Qty	0	250	440	450	376	382	379	332	2359	0	2609
Delta Qty (Current - Required)	0	(11)	5	17	0	0	0	26	48	0	37

Ref: Total Life Cycle Systems Management (TLCSM) and Performance Based Logistics (PBL)

PM to refine/complete/approve and fully fund Life Cycle Cost estimates to product support strategy/sustainment approach within the overall Acquisition Strategy (ASR).

Use IPT Funding Worksheet: "***IPT O&S Briefing Slide 2***" included

DoD Website Sources: (cut & paste below links to web brower)

TLCSM & PBL

http://akss.dau.mil/dag/GuideBook/IG_c5.4.3.2.asp

http://akss.dau.mil/dag/Guidebook/IG_c5.5.3.asp

Operating & Support Cost Estimating Structures

https://acc.dau.mil/simplify/ev.php?ID=1457_201&ID2=DO_TOPIC

Inworks to Add a New Spruill "O&S Funding Chart" to Better Support IPTs/DAB Reviews

version 4.5(O&S)v2

SAMPLE Estimated Operating & Support Investment Program Funding

Working Draft

($ in Millions / Then Year)

	Current (FYDP FY06-11)				FYXX Projected Required						TLCSM Percentage Deltas Current vs. Projected Required	Estimate TLCSM To Com
	RDT&E	PROCUREMENT	O&M	Overall Unit of Measure or Key Performance Metric(s)	RDT&E	PROCUREMENT	O&M	MILPERS	MILCON	Overall Unit of Measure or Key Performance Metric(s)		
						O&S						
1.0 UNIT PERSONNEL				• Block supports bullet statement(s) or free text	0	0			0	• Block supports bullet statement(s) or free text	14%	466
2.0 UNIT OPERATIONS	0	0	0	• Block supports bullet statement(s) or free text	0	0	0	40	12	• Block supports bullet statement(s) or free text	0%	52
3.0 MAINTENANCE	20	126	70	• Block supports bullet statement(s) or free text	60	453	200	100	0	• Block supports bullet statement(s) or free text	27%	1029
4.0 SUSTAINING SUPPORT	0	0	10	• Block supports bullet statement(s) or free text	0	222	0	0	0	• Block supports bullet statement(s) or free text	0%	2403
5.0 CONTINUING SYSTEM IMPROVEMENTS	0	0	0	• Block supports bullet statement(s) or free text	0	0	80	0	0	• Block supports bullet statement(s) or free text	0%	80
6.0 INDIRECT SUPPORT	85	125	6	• Block supports bullet statement(s) or free text	0	800	426	44	0	• Block supports bullet statement(s) or free text	17%	1486
TOTAL	113	251	136		60	3481	796	667	12		10%	5516

Apply Logistics Planning for Overall O&S realism, Feasibility and Programs

Apply Logistics Planning for Overall O&S realism, Feasibility and Programs

Sanity Check Way Ahead: The plan is to validate with program office(s) in order to better understand the overall O&S realism, feasibility, and practical implementation to produce for OIPT milestones and other reviews.

Total Life Cycle Systems Management (TLCSM) To Comp	
RDT&E TLCSM Sum Required	173
O&S TLCSM Sum Required	
Procument	3732
O&M	932
MILPERS	667
MILCON	12
Estimated TLCSM To Comp	5516

AT&L Efforts to Strengthen the Visibility of the Operating & Support in Performance Based Logistics (PBL)

Recent PBL Efforts

DepSecDef PBL Guidance
- AT&L issue consistent guidance
- Service plans for all ACAT I and II programs

Strategic Planning Guidance
- Service BCAs for all ACAT I and II by FY 06
- Initial management review by September 04

Clear PBL BCA Guidance
- Total life cycle costs
- Best value
- Operationally driven

Clear PBL Contracting Guidance
- Accelerate PBL Contracting
- Establish PBL Metrics

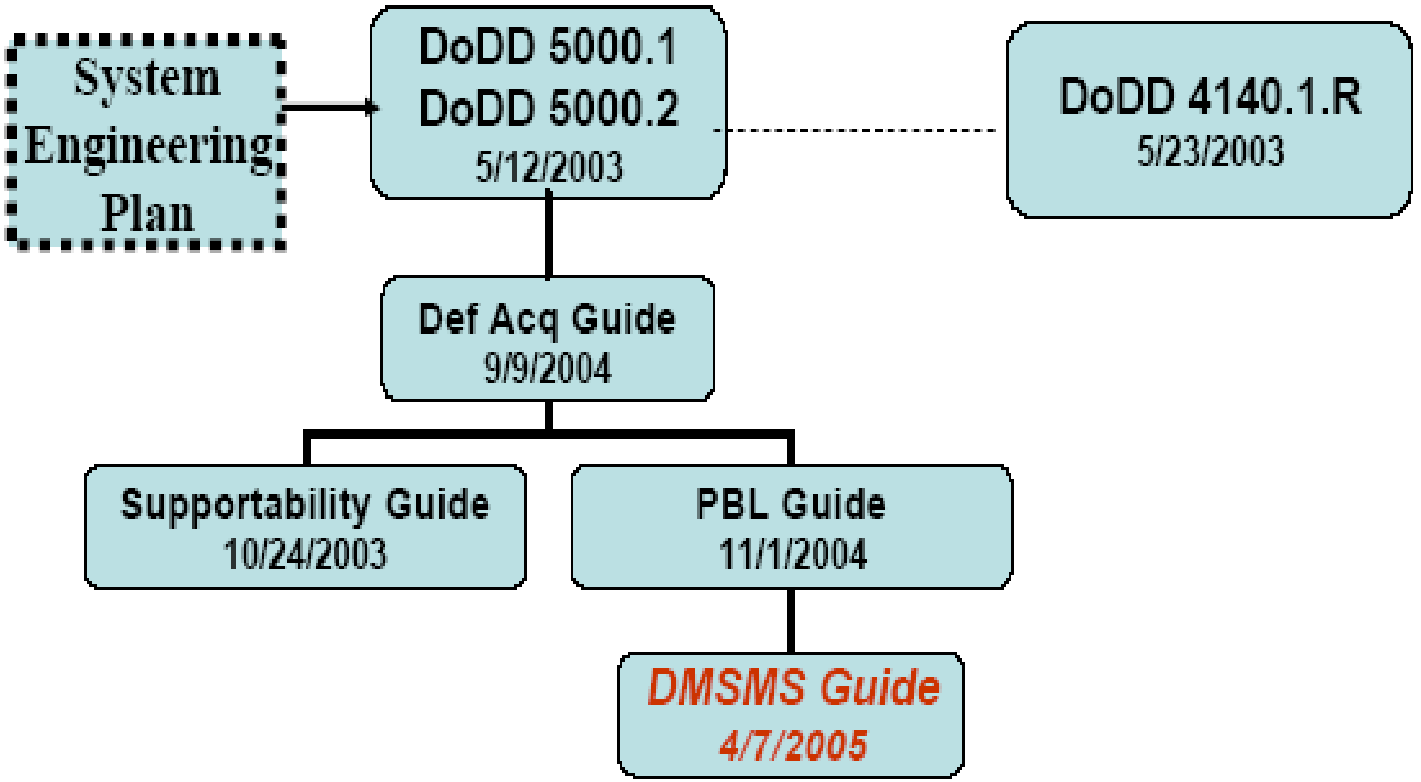
✓ **Established Supportability Design and Assessment Criteria** — *24 Oct 03*
- Incorporates SDOE
- Technical Guidance by Milestone

✓ **New Defense Acquisition Guidebook** — *On Line*
- PM's TLCSM and PBL responsibilities clearly defined

✓ **Updated PBL Product Support Guide** — *10 Nov 04*
- A Tool for Program Managers
- Incorporates latest lessons learned

✓ **MID 917 – PBL** — *20 Oct 04*
- Lead programs
- Program/budget to single activity group

Hierarch of Key PBL Publications



OASD(NII)/DoD Three Goals

Background Information

OASD(NII)/DoD CIO Goals

- **Goal #1 - Make information available on a network that people depend on and trust.**
- **Goal #2 - Populate the network with new, dynamic sources of information to defeat the enemy.**
- **Goal #3 - Deny the enemy comparable advantages and exploit weaknesses.**